Resources & Stats

Nuclear Waste: Amounts and On-Site Storage

High-Level Radioactive Waste

High-level radioactive waste is the spent, or used, uranium fuel from nuclear power plants.

A typical nuclear power plant in a year generates 20 metric tons of used nuclear fuel. The nuclear industry generates a total of about 2,000 metric tons of used fuel per year.

Over the past four decades, the entire industry has produced about 56,000 metric tons of used nuclear fuel. If used fuel assemblies were stacked end-to-end and side-by-side, this would cover a football field about six yards deep.

U.S. State-by-State Commercial Nuclear Used Fuel and Payments to the Nuclear Waste Fund

Low-Level Radioactive Waste

Low-level radioactive waste (LLRW) consists of items that have come in contact with radioactive materials, such as gloves, personal protective clothing, tools, water purification filters and resins, plant hardware, and wastes from reactor cooling-water cleanup systems. It generally has levels of radioactivity that decay to background radioactivity levels in less than 500 years. About 95 percent decays to background levels within 100 years or less.

Amount of low-level radioactive waste generated per year by plant/industry:

1998 Average Reactor Volume – 742 cubic feet (21 cubic meters) for PWRs; 2,790 cubic feet (79 cubic meters) for BWRs
1998 Industry Volume – 135,394.71 cubic feet (3,834 cubic meters)
The amount of low-level radioactive waste volume going to disposal facilities, such as Barnwell, has been reduced 96 percent since 1980. There is a downward trend in the volume of LLRW generated as well.
As of June 2000, South Carolina will have received about $300 million, $235 per cubic feet, in taxes on low-level nuclear waste disposed of at Barnwell.
LLRW disposal facilities: Barnwell, S.C.; Hanford, Wash.; Envirocare, Utah
For more State and Compact information on LLRW, visit www.llwforum.org.

On-Site Storage

U.S. commercial nuclear power plants with on-site dry used fuel storage facilities:
As of December 2004, more than 690 containers have been loaded at 30 nuclear sites.

About 20 reactors at 16 commercial nuclear sites will need additional storage space by 2010, and at least 22 more reactors will need additional storage by the end of 2015.

Status of Used Nuclear Fuel Storage at U.S. Commercial Nuclear Plants

Manufacturers of interim used fuel storage systems:

Holtec International Inc.
BNG Fuel Solutions
Transnuclear Inc.
NAC International Inc.

Interim Dry Used Fuel Storage Facilities:

Vertical Storage

Horizontal Storage